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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/759,509      | 01/12/2001  | Werner Knebel        | 293.000410          | 2458             |

7590                    09/11/2002

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[REDACTED] EXAMINER

NGUYEN, THONG Q

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2872     | g            |

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                            |
|------------------------------|-----------------|----------------------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s)               |
|                              | 09/759,509      | KNEBEL, WERNER<br><i>M</i> |
|                              | Examiner        | Art Unit                   |
|                              | Thong Q. Nguyen | 2872                       |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 07 June 2002.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 12-28 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 and 29-43 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 January 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                           | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 . | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Species II claims 29-43 in Paper No. 8 of May 31, 2002 is acknowledged. The traversal is on the ground(s) that both species are drawn to microscope assemblies for confocal scanning microscope. This is not found persuasive because the microscope assembly for a confocal scanning microscope can be used with more than one light source and without polarization elements.

As a result of applicant's election, claims 29-43 and the generic claim 1 and its dependent claims 2-11 are examined in this Office action, and claims 12-28 have been withdrawn from further consideration. However, the Examiner will rejoin the claims 12-28 if the generic claim 1 is later found as patentable claim.

The requirement is still deemed proper and is therefore made FINAL.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

3. The drawings contain four sheets of figures 1-4 filed by applicant on 01/12/2001 have been received by the Office.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature concerning the use of only one detector for detecting both the fluorescent light and transmitted light

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as recited in each of claims 9 and 39 must be shown or the feature canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Specification***

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

6. The Summary of the Invention is objected to because it contains numerous details of the inventive device. It also refers to the prior art. Applicant should amend the Summary by providing a brief technical description of the inventive device and moving other descriptions/explanations to other section such as the section of "Detailed description of the invention". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 33-38 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable

one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

a) Claim 33 is rejected under 35 USC 112, first paragraph because the specification has not disclose an embodiment having two light sources and a set of detectors wherein the detectors are arranged by the structure as claimed. Applicant should note that while the specification discloses four embodiments of the microscope assembly; however, the only embodiment containing two light sources is the embodiment described in pages 11-12 and shown in figure 4. In this (or fourth) embodiment, the system comprises two light sources and three detectors. The light source system comprises a (laser) light source (1) disposed on one side of the specimen which side contains an objective lens (5) and an addition (while) light source (21) disposed on the other side of the specimen which other side contains a condenser lens (7). The three detectors comprises two fluorescent-light detectors (11 and 14) disposed on the same side with the additional (or while) light source (21) and the condenser lens (7) and the other (or third) detector (17) is disposed on the same side with the (laser) light source (1) and the objective lens (5). As such the light provided by the (laser) light source (1) transmitted through the specimen is received/detected by the detectors (11 and 14), and the light provided by the addition (or while) light source (21) is received/detected by the detector (17). The light provided by the (laser) light source (1) and detected by the detector (17) is not considered as light transmitted by the light source (1), and the light provided by the additional (or

while) light source (21) and detected by the detectors 911 and 14) is not considered as light transmitted by the additional (or while) light source (21). As a result, the structure of the fourth embodiment described in pages 11-12 and shown in fig. 4 is not matched with the structure as claimed in claim 33/29.

b) The remaining claims are dependent upon the rejected base claim and thus inherit the deficiency thereof.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-11 and 29-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1 is rejected under 35 USC 112, second paragraph by the use of the terms "in particular" (line 1) in the claim. The mentioned terms render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

b) Claim 29 is rejected under 35 USC 112, second paragraph for the similar reason as set forth in element a) above.

c) Claim 31 is indefinite by the recitation thereof "an optical...light source" (lines 1-4). Applicant should note that the specification discloses the use of an optical element in association with the additional light source (21) wherein the optical element can be a sector stop or a sector phase stop, etc..., See specification in page 6. The specification

has never discloses that the optical element is a system constituted by a combination of "a sector optical system, a sector polarization...sector phase filter" (lines 2-4).

d) Claim 32 is indefinite because the feature "the Fourier plane" (line 2) lacks a proper antecedent basis.

e) Claim 42 is rejected under 35 USC 112, second paragraph for the following reasons: 1) the feature "at least one detector" (lines 1-2) is indefinite because it is unclear what detector applicant implies by the mentioned feature. Applicant should note that the base claim 29 recites two kind of detectors; and 2) the claim is rejected under 35 USC 112, second paragraph by the use of the term "preferably" (line 3) in the claim. The mentioned term renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

f) The remaining claims are dependent upon the rejected base claims and thus inherit the deficiencies thereof.

#### ***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-4 and 9-11, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Ichie (U.S. Patent No. 5,796,112).

Ichie discloses a laser scanning microscope having an illuminating system and detecting systems for detecting fluorescent light from a sample. The microscope as described in columns 14-16 and shown in fig. 10, for example, comprises a laser light source (1) for providing light to a sample (15) containing fluorescent agent wherein the sample has a top side facing to an objective lens system (14) and a bottom side facing to a condenser lens system (17), a scanning system (12) for scanning the light from the laser in two directions on the sample; a set of dichroic beam-splitters (31b and 31c), a set of detecting devices (19a-19c) wherein the detecting devices (19b-19c) receive fluorescent light reflected from the beam-splitters and the detecting device (19a) receives light transmitted through the beam-splitters. It is noted that 1) the light received by the detecting devices (19a-19c) are the light pass through the sample (15); 2) the detecting device can be a multiband detecting device. See column 14 and fig. 8; and 3) the beam-splitters and the detecting devices are disposed on the same side with the condenser lens system. Regard to the use of a single detecting device for receiving both fluorescent light and transmitted light passing through the sample. It is noted that in the embodiment as described in columns 8-9 and shown in fig. 1, Ichie discloses the use of a single detecting device (19a) on the same side with the condenser lens system (17) for receiving the fluorescent and transmitted light.

13. Claims 1, 10, 29-34, and 39-43, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Jorgen (U.S. Patent No. 5,535,052).

Jorgen discloses a laser scanning microscope having an illuminating system and detecting systems. The laser scanning microscope as described in columns 4-6 and

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shown in fig. 2, for example, comprises a laser light source (31) for providing light to a sample containing fluorescent agent wherein the sample has a top side facing to an objective lens system (5) and a bottom side facing to a condenser lens system (24), a scanning system (13,14) for scanning the light from the laser in two directions on the sample; a set of dichroic beam-splitters (36-39), a set of detecting devices (29 and 47-49) wherein the detecting devices (47-49) receive fluorescent light reflected from the beam-splitters and the detecting device (29) receives light transmitted through the sample containing fluorescent dye activated by the laser light. It is also noted that the use of another light sources is suggested by Jorgen when he teaches the additional light source modules (D and E) on the same side with the objective lens system (5) and another light source (28) which as understood is a white light source on the same side with the condenser lens system (24). The use of filter for each of additional light sources is also suggested by Jorgen as can be seen in column 6.

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichie (U.S. Patent No. 5,796,112) in view of Kapitza (DE 37 42 806).

The laser scanning microscope provided by Ichie meets all of the limitations recited in the pending claims 5-8 except the feature concerning the comparison

between the apertures of the objective lens system and the condenser lens system. However, a scanning microscope having an illuminating system and a detecting system wherein the aperture of the condenser lens system is larger than the aperture of the objective lens system is clearly suggested to one skilled in the art as can be seen in the laser scanning microscope for detecting fluorescent sample provided by Kapitza. See columns 3-4 and fig. 2. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the laser scanning microscope provided by Ichie by using a condenser lens system having an aperture larger than the aperture of the objective lens system as suggested by Kapitza for the purpose of improving the collection of the fluorescent detected light to the detecting devices.

16. Claim 35, as best as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Jorgen (U.S. Patent No. 5,535,052) in view of Kapitza (DE 37 42 806).

The laser scanning microscope provided by Jorgen meets all of the limitations recited in the pending claim 35 except the feature concerning the comparison between the apertures of the objective lens system and the condenser lens system. However, a scanning microscope having an illuminating system and a detecting system wherein the aperture of the condenser lens system is larger than the aperture of the objective lens system is clearly suggested to one skilled in the art as can be seen in the laser scanning microscope for detecting fluorescent sample provided by Kapitza. See columns 3-4 and fig. 2. Thus, it

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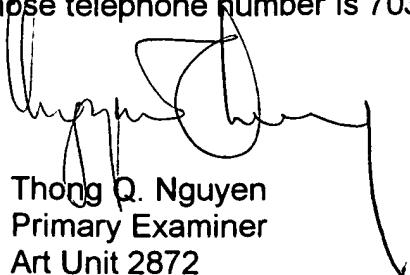
would have been obvious to one skilled in the art at the time the invention was made to modify the laser scanning microscope provided by Jorgen by using a condenser lens system having an aperture larger than the aperture of the objective lens system as suggested by Kapitza for the purpose of improving the collection of the fluorescent detected light to the detecting devices.

***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (703) 308-4814. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on (703) 308-1687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



Thong Q. Nguyen  
Primary Examiner  
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August 30, 2002